345 Managing community exercise referrals: does cross infection occur?

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Introduction: We have previously reported the controversies of exercise referral to community gyms and the risks of cross infection for patients with different microbiological groups (MG) [1]. As per MACFU guidelines each individual is informed if another patient attends the same gym and specific attendance times arranged to avoid direct contact. The aim of the study was to determine if cross infection occurred between patients with different MG referred to the same gym.
Methods: We surveyed the records of 41 referrals made over a 3 year period (2003–2005). Data was collected for MG and groups of patients attending the same gym. Attendance ratings and changes to microbiological grouping including strain typing were recorded.
Results: 23 females and 18 males were referred. Mean (range) BMI 22.4 (14–38.3), FEV1 2.38 (0.85–4.4) l/min. The MG consisted of 16 sporadic *Pseudomonas aeruginosa* (Pa), 13 transmissible Pa, 9 non-Pa, 2 *Burkholderia cenocepacia*, and 1 *Burkholderia gladioli*.
Three pairs (6 patients), mean (range) BMI 21.95 (19.4–29.2) FEV12.3 (1.65–3.3) were referred with different MG's to 3 different venues. Pair 1: sporadic Pa and transmissible Pa. Pair 2: non-Pa and transmissible Pa; and pair 3: non-Pa and sporadic Pa. 5 of the 6 were classed as regular attenders (>1 visit per week) and 1 a poor attender. All patients reported lapses in attendance related to ill health or busy social/work spells for periods up to 2 months. None of the pairs attending the same venue changed microbiological group as a result of attendance at their exercise facility.
Conclusion: Routine microbiological surveillance and negotiation of attendance times have prevented cross infection in patients with different MG's attending the same gym.

References

[1] McVean 2004.

346 Community physiotherapy for newly diagnosed infants with Cystic Fibrosis (newborn screening)

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The Victorian Royal District Nursing Service Cystic Fibrosis Home Support Team was established in 1989 in conjunction with the introduction of newborn screening. The community team consists of one cardiothoracic senior clinician physiotherapist and two CF clinical nurse consultants that service Metropolitan Melbourne and the Mornington Peninsula (approximately 80 km radius). Community physiotherapy support and education for parents and family members of newly diagnosed infants with CF, is provided to those from either the Royal Children's Hospital or Monash Medical Centre CF units.
The community physiotherapy role provides a communicative link between the family and the hospital-based physiotherapy and medical teams. Ongoing education regarding CF, physiotherapy techniques, acute assessment, compliance and motivation, and the referral to relevant CF team members as appropriate, plays a vital role in the success of the RDNS CF team.
An audit of newly diagnosed infants with CF was undertaken to evaluate the degree of community physiotherapy input that had occurred from August 2003 to mid-April 2005. Fifteen infants had been registered by RDNS, with a total of 96 home physiotherapy visits, consisting of 103.5 hours of physiotherapy input. The greatest amount of visits to one infant was 22, with the least amount of visits being 2.
Concentrated community physiotherapy support is not only a valuable asset for the hospital-based CF teams, but advantageous for the newly diagnosed infant and family.

347* A comparison of five airway clearance techniques in the treatment of people with Cystic Fibrosis

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Aim: To compare the long-term effects, over one year, of the airway clearance techniques of the active cycle of breathing techniques, autogenic drainage, cornet, flutter and positive expiratory pressure using the primary outcome measure of forced expiratory volume in one second (FEV1).
Method: Seventy-five subjects were randomised to one of the five airway clearance regimens, in the sitting position, and monitored at monthly intervals for one year. Measurements included FEV1, forced vital capacity (FVC), maximal expiratory flow at 25% of forced vital capacity (MEF25), residual volume as a percentage of total lung capacity (RV/TLC%), body mass index, exercise capacity (modified shuttle test) and health related quality of life (Chronic Respiratory Questionnaire and Short Form-36). The mixed model analysis of variance was used to analyse the data.
Results: Median age: 27 years (range:17–63 years). Forty-seven were male. Using intention to treat, lung function data were available on 65 subjects. There were no statistically significant differences among the regimens in the primary outcome measure of FEV1 ($p = 0.35$). There was a significant deterioration over time ($p = 0.02$) for the group as a whole. There were no statistically significant differences among the regimens in the secondary outcome measures.
Conclusions: This study suggests that there are no significant differences among the airway clearance regimens of the active cycle of breathing techniques, autogenic drainage, cornet, flutter or positive expiratory pressure over the period of one year. Greater consideration should therefore be given to patient choice.

348 Establishing paediatric patients on an Adaptive Aerosol Delivery (AAD) device

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Aerosol drug delivery is a major component of CF care and requires significant time and resources. We describe the transfer of children from a standard jet nebuliser system (with venturi effect) to an adaptive aerosol delivery (AAD) device and the particular issues raised by this change in practice. In the UK, an AAD device (I-neb) is made available to patients free of charge if they are prescribed a specific brand of Colistin (Promixin). The I-neb uses a vibrating mesh plate with multiple apertures to aerosolise liquid. During the first three breaths the AAD device analyses pressure changes relating to airflow establishing the optimum time for aerosol delivery during inspiration. Once the pre-programmed dose is delivered the device gives audio and visual feedback informing the patient that treatment is complete. Unpublished data from the company suggest more efficient drug delivery resulting in reduced dosage. Training of correct breathing technique to include a prolonged inspiratory phase can significantly reduce treatment time. This can be facilitated by a software-training package. Since March 2005, 52 patients have been established on the I-neb (age range 2–17 years). In 20 children, treatment times ranged from 2 to 6 minutes (recorded by in-device data logger). In addition to shorter treatment times, patients commented positively on portability and quieter operation. With improving technology CF clinics are faced with an increasing choice of devices to deliver therapies (often with a lack of clinical trial data). In our experience, despite the time and resource implication in changing to an AAD device, our families have provided positive feedback in all cases. More information is needed regarding dosage.